

WE CLAIM:

1 1. A biometric data card, comprising:
2 an image sensor for capturing an image of a biometric feature of a user of the
3 biometric data card and producing first image data representing the image;
4 a memory operable to store second image data; and
5 a processor in communication with said image sensor and said memory, said
6 processor operable to perform a comparison of the first image data with the second image
7 data, and, to generate, in response to the comparison, authentication information
8 representative of an authentication of the user.

1 2. The biometric data card of Claim 1, further comprising:
2 an interface operable to transmit the authentication information from the
3 biometric data card to a terminal.

1 3. The biometric data card of Claim 2, wherein said interface comprises a contact
2 pad operable to form an electrical connection to the terminal, said contact pad being further
3 operable to transmit the authentication information from the biometric data card to the
4 terminal via the electrical connection.

1 4. The biometric data card of Claim 2, wherein said processor is further operable
2 to determine adjustment information for the terminal to use in capturing an additional image
3 of the biometric feature and to transmit the adjustment information to the terminal via the
4 interface.

- 1 5. The biometric data card of Claim 1, further comprising:
 - 2 an optical element for transferring the image to said image sensor.
- 1 6. The biometric data card of Claim 1, wherein said processor is further operable
 - 2 to extract first feature characteristics from the first image data and second feature
 - 3 characteristics from the second image data, and to compare the first feature
 - 4 characteristics to the second feature characteristics to determine the authentication
 - 5 information.
- 1 7. The biometric data card of Claim 1, wherein:
 - 2 said second image data comprises second feature characteristics; and
 - 3 said processor is further operable to extract first feature characteristics from
 - 4 the first image data and to compare the first feature characteristics to the second feature
 - 5 characteristics to determine the authentication information.
- 1 8. The biometric data card of Claim 1, wherein said image sensor is a CMOS
 - 2 image sensor.
- 1 9. The biometric data card of Claim 1, wherein said image sensor is a CCD
 - 2 image sensor.
- 1 10. The biometric data card of Claim 1, wherein the biometric feature is at least
 - 2 one of an iris of an eye of the user, a facial feature of the user or a fingerprint of a finger of
 - 3 the user.

1 11. A terminal for authenticating a user of the terminal, comprising:
2 an optical interface configured to receive light reflected from a biometric
3 feature of the user;
4 an optical element optically coupled to said optical interface via an optical
5 path, said optical element operable to form an image of the biometric feature from the
6 reflected light and to direct the image onto an image sensor; and
7 a card interface configured to receive a biometric data card and operable to
8 authenticate the user based on the image and to provide an authentication signal to the
9 terminal.

1 12. The terminal of Claim 11, wherein said card interface is operable to receive
2 the authentication signal.

1 13. The terminal of Claim 12, wherein said card interface includes a contact pad
2 operable to form an electrical connection to the biometric data card, the authentication signal
3 being received via the electrical connection.

1 14. The terminal of Claim 12, wherein the card interface is further operable to
2 receive a feedback signal from the biometric data card, the feedback signal providing
3 adjustment information to the terminal for use in capturing an additional image of the
4 biometric feature.

1 15. The terminal of Claim 12, wherein the image sensor is part of the terminal,
2 and wherein the card interface is further operable to transmit image data representing the
3 image produced by the image sensor to the biometric data card.

1 16. The terminal of Claim 12, wherein the image sensor is part of the biometric
2 data card, and wherein said card interface is optically coupled to said optical interface and
3 said optical element to direct the image onto the image sensor within the biometric data card.

1 17. The terminal of Claim 11, further comprising:
2 a processor connected to receive the authentication signal and operable in
3 response to the authentication signal to allow the terminal to interact with the user.

1 18. The terminal of Claim 17, further comprising:
2 a user interface.

1 19. The terminal of Claim 11, further comprising:
2 an illumination source disposed in relation to said optical interface to
3 illuminate the biometric feature of the user.

1 20 The terminal of Claim 11, wherein said optical element includes a lens.

1 21. The terminal of Claim 11, further comprising:
2 transfer optics located between said optical interface and said optical element
3 to direct the reflected light to said optical element.

1 22. The terminal of Claim 11, wherein the terminal is part of a cellular telephone,
2 pay phone, credit card machine or identification terminal.

1 23. A system for authenticating a user, comprising:

2 a biometric data card including an image sensor for capturing an image of a
3 biometric feature of the user and for producing first image data representing the image, said
4 biometric data card operable to perform a comparison of the first image data with second
5 image data, and, to generate, in response to the comparison, authentication information
6 representative of an authentication of the user; and

7 a terminal including a card interface configured to receive said biometric data
8 card and operable to receive the authentication information from said biometric data card,
9 said terminal further including an optical element arranged to direct light from the biometric
10 feature onto the image sensor.

1 24. The system of Claim 23, wherein said card interface includes a first contact
2 pad operable to form an electrical connection to a second contact pad on the biometric data
3 card, the authentication signal being transmitted from said biometric data card to said
4 terminal via the electrical connection.

1 25. The system of Claim 23, wherein the card interface is further operable to
2 receive from the biometric data card adjustment information for use by said terminal in
3 capturing an additional image of the biometric feature.

1 26. A method for authenticating a user using a biometric data card, the method
2 comprising:

3 producing in the biometric data card first biometric image data in response to
4 an image of a biometric feature of the user;
5 comparing in said biometric data card the first biometric image data with
6 second biometric image data; and
7 authenticating the user in response to said comparing.

1 27. The method of Claim 26, further comprising:

2 transmitting an authentication signal from the biometric data card to a
3 terminal; and
4 in response to the authentication signal, allowing the terminal to interact with
5 the user.

1 28. The method of Claim 27, further comprising:

2 determining adjustment information for use by the terminal in capturing an
3 additional image of the biometric feature; and
4 transmitting the adjustment information from the biometric data card to the
5 terminal.

1 29. The method of Claim 27, wherein said producing includes capturing the image
2 on an image sensor external to the biometric data card, and transmitting resulting image data
3 to the biometric data card.

1 30. The method of Claim 29, wherein:

2 said producing includes extracting first feature characteristics from the image

3 data to produce the first biometric image data;

4 the second biometric image data includes second feature characteristics

5 extracted from a previous image; and

6 said comparing includes comparing the first feature characteristics to the

7 second feature characteristics.

1 31. The method of Claim 27, wherein said producing includes capturing the image

2 on an image sensor in the biometric data card.

1 32. The method of Claim 26, wherein said producing further includes illuminating

2 the biometric feature.

1 33. The method of Claim 26, further comprising.

2 communicating with a remote server based on said authenticating.